

*Excellence in Electronics***TYPE  
2E31**

The 2E31 is a filament type, fully-shielded pentode of subminiature construction designed for use as an RF or IF amplifier in applications requiring economy of space, weight and battery drain. The flexible terminal leads may be soldered or welded directly to the terminals of circuit components without the use of sockets. Standard inline subminiature sockets may be used by cutting the leads to a suitable length.

**MECHANICAL DATA****ENVELOPE:** T-2X3 Glass ▲**BASE:** None (0.016" tinned flexible leads. Length: 1.5" min.  
Spacing: 0.048" center-to-center)**TERMINAL CONNECTIONS:** (Red Dot is adjacent to Lead 1)

Lead 1 Plate	Lead 4 Grid #1
Lead 2 Grid #2	Lead 5 Filament,
Lead 3 Filament, negative; shield ■	positive ■

**MOUNTING POSITION:** Any**ELECTRICAL DATA****DIRECT INTERELECTRODE CAPACITANCES:** ( $\mu\text{tfs.}$ )

Grid to Plate: (g1 to p)  
Input: g1 to (f+g2)  
Output: p to (f+g2)

0.08 max.  
4.2  
4.0

**DESIGN CENTER MAXIMUM RATINGS:**

Filament Voltage (dc) ●  
Plate Voltage  
Grid #2 Voltage  
Total Cathode Current

1.25 volts  
45 volts  
45 volts  
1.0 ma.

**CHARACTERISTICS AND TYPICAL OPERATION - CLASS A1 AMPLIFIER:**

Filament Voltage (dc) ●  
Filament Current  
Plate Voltage  
Grid #2 Voltage  
Grid #1 Voltage ♦  
Plate Resistance (approx.)  
Transconductance  
Plate Current  
Grid #2 Current  
Grid #1 Voltage (approx.)  
for plate current = 10  $\mu\text{a.}$

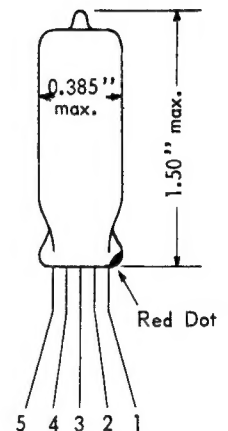
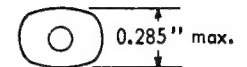
1.25 volts  
50 ma.  
22.5 volts  
22.5 volts  
0 volts  
0.35 megohms  
500  $\mu\text{mhos}$   
0.4 ma.  
0.3 ma.  
-2.0 volts

▲ Bulb is entirely coated with a metallic shield connected to Lead 3.

♦ Grid resistor = 5 megohms.

■ Grid #3 is composed of two deflector plates, one being connected to Lead 3 and the other to Lead 5.

● Do not use in series filament circuits. Filament voltage must never exceed 1.55 volts.



Tentative Data

RAYTHEON MANUFACTURING COMPANY

RECEIVING AND CATHODE RAY TUBE OPERATIONS